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DATA ON THE ZIS-151 TRUCK

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The ZIS-151 truck is a 6 x 6 of increased roadability designed to carry 4.5 tons on hard-top roads and 2.5 tons under roadless conditions. The truck navigates mud, fords, snow, and muddy slopes with ease. High specific power of the motor, correct selection of transmission gear ratios, six driving wheels, equalized suspension of the rear bogie, tires with high-traction treads, correct distribution of the load among the axles, a large turning angle, and sufficient road clearance give the truck ample roadability.

The weight of the truck is distributed among the axles as follows (in percent):

	<u>Unloaded</u>	<u>With Load of 2.5 Tons</u>
Front axles	40	28
Rear bogie	60	72

Turning angles; front, 50 degrees; rear, 32 degrees.

Road clearances with a load of 2.5 tons are: front axle housing, 260 millimeters; middle and rear axles, 265 millimeters; transfer case, 460 millimeters; rear bogie equalizer suspension axle, 300 millimeters.

The truck has two gas tanks and carries two spare tires.

Roadless stretches where the snow is more than 400 millimeters deep are surmounted by lining up a group of trucks bumper to bumper and consolidating their tractive force.

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The ZIS-151 uses standard parts, units, and aggregates in common with the ZIS-150 (power unit, electrical equipment, basic parts of the air drive, brakes, etc.), the ZIS-110 (shock absorbers), the GAZ-51 (main transmission, differential, rear axle housing), and the GAZ-63 (parts of the front axle). Thus, the use, servicing, and repair of the truck are simplified.

Original features are double oil pumps, and an oil radiator fitted with a grille that is adjustable from the cab of the truck in front of the water radiator. Provision has been made for powering a winch from the transmission.

The transfer case is one-way, two-speed; gear ratio for first gear is 2.44:1, for second gear 1.24:1. The first gear of the transfer case can be engaged only when the front axle is engaged. When the second gear of the transfer case is engaged, the front axle can be engaged and disengaged at all speeds without disengaging the clutch. The transfer case and front axle are controlled by special levers in the cab. Provision is made for taking power off the transfer case: a mechanically operated central disk shoe brake is mounted on the rear axle drive shaft.

The open-type propeller shaft is dynamically balanced and has joints on needle bearings. Each axle has a separate propeller drive. The propeller shaft for the rear axle has an intermediate support on the middle axle shaft housing. The universal joints and the splined joints of the shaft assure normal operation of the transmission when driving over rough terrain.

The main transmissions of the axles are of the conical type with a ratio of 6.67:1, the differentials are conical and have four pinions, the axle shafts are unloaded, and the housings are dismountable. The front wheels are driven by universal joints with constant angular velocity.

Double-action piston hydraulic shock absorbers are mounted on the front axles. The rear bogie axles have equalized suspension with longitudinal semi-elliptic inverted springs, and reaction rods that transmit impulses from the axles to the frame.

The front axles are normally mounted with single wheels, and the rear axles with double wheels, but it is possible to mount double wheels on the front axles and single wheels on the rear axles.

All wheels of the truck are equipped with pneumatic-drive shoe brakes.

The all-metal cab has windshields that can be opened. The universal-type body is of wood framed with metal, and provision is made for setting up a tarpaulin. There is room for two spare wheels between the cab and the body.

The ZIS-151 truck received a positive evaluation in state tests, at which time it was noted that it could be used to tow trailers weighing up to 3.6 tons.

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